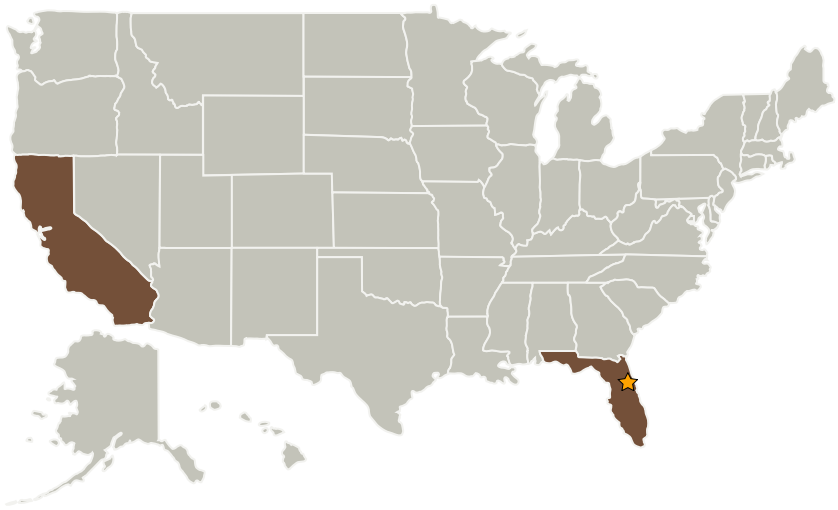
Tracking Launch Vehicles in Interference and Jamming, Phase I

Completed Technology Project (2009 - 2009)

Project Introduction

MARK Resources proposes to develop a method for combining a set of distributed FRPAs into a network that provides high GPS anti-jam/interference capability. Like a CRPA, the number of jammers that the proposed system can suppress is one less than the number of elements. In contrast to a CRPA, the individual elements of the proposed system need not be precisely located relative to one another. The proposed system is compatible with any GPS antennas and receiver hardware, operates on the C/A code, and has a small processing load. The suppression of the jammers and interference creates slightly delayed copies of the code from each satellite. Because the delays are known and small, any degradation in the accuracy of derived antenna positions (relative to that without jamming and interference) should also be small, without any consequence on range safety. The proposed program will quantify the accuracy achievable in individual position measurements, and the utility of combining the measured positions of multiple antennas for purposes of antenna pointing, docking maneuvers, and attitude determination. In order to transition the proposed technology to NASA, the DoD, and commercial markets, we plan to team with The Boeing Company in Phase II and beyond.

Primary U.S. Work Locations and Key Partners



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Kennedy Space Center (KSC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★Kennedy Space Center(KSC)	Lead Organization	NASA Center	Kennedy Space Center, Florida
MARK Resources, Inc.	Supporting Organization	Industry	Torrance, California

Primary U.S. Work Locations	
California	Florida

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX17 Guidance, Navigation, and Control (GN&C)
  - TX17.4 Attitude Estimation Technologies
    - TX17.4.3 Attitude Estimation Sensors